

Appl. No. 09/212,726

REMARKS

Claim 60 is amended, claims 60-64, 66-68 and 70 are pending in the application.

Claims 60-64, 66-68 and 70 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner indicates that the recited limitation "without feeding added ozone into the chemical vapor deposition reactor" is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the invention at the time the application was filed. The Examiner indicates that this position is based on the specification failing to address ozone. The Examiner further indicates that "this new limitation amounts to new matter" and that "should applicant wish to eliminate ozone in the reaction gas mixture the proper course of action is to recite "consisting of" in the preamble".

Applicant notes with direction to MPEP § 2163.04 that the Examiner has an initial burden of presenting evidence as to why persons skilled in the art would not recognize in applicant's disclosure a description of the invention defined by the claims. Referring to § 2163.02, applicant further notes that the subject matter of the claim need not be described literally so long as the limitation to the claim added by amendment does not involve a departure from addition to or deletion from the disclosure of the application as filed. The test for sufficiency of support in the specification is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed. As acknowledged by the Examiner at page 2 of the present Action, the specification does not address ozone. However, applicant's specification does present methodology which can successfully achieve the invention without feeding added ozone to the chemical vapor deposition reactor. Accordingly, the limitation "without feeding added ozone" is inherent in

Appl. No. 09/212,726

applicant's disclosure and such would be clearly conveyed to one skilled in the art. Applicant is not required to list in the specification every compound substance or other limitation which can be excluded from utilization in the methodology in order to successfully obtain or produce the invention. For these reasons applicant respectfully requests withdrawal of the § 112, first paragraph, rejection based on the recitation "without feeding added ozone" in the Examiner's next action.

The pending claims stand additionally rejected under § 112, first paragraph, based on the limitation "to directly deposit SiO_2 " or "the SiO_2 being formed during the directly depositing". The Examiner states that such limitations are not sufficiently supported by the specification. The Examiner also indicates that silanol will be deposited not SiO_2 because H_2O and H_2O_2 are used as oxidants and the specification is only directed to reduction of intermediates not elimination.

Applicant notes that at page 9, lines 4-8, applicant's specification specifically indicates that precursors fed into the reactor are decomposed into SiO_2 . At page 9, lines 12-14 the specification further specifically indicates that it is the SiO_2 which deposits on the substrate. This direct deposition limitation is further supported by the specification by the claims as originally filed. Referring to original claim 1, such specifically recites that the organic precursor is fed into a reaction chamber and that the precursor decomposes into SiO_2 which deposits on the substrate. Accordingly, the limitation of directly depositing SiO_2 and SiO_2 being formed during directly depositing are fully supported by the specification as originally filed. Applicant therefore requests withdrawal of the § 112, first paragraph, rejection of the pending claims based on the direct deposition of SiO_2 in the Examiner's next action.

Appl. No. 09/212,726

Claims 60-64, 66-68 and 70 stand rejected under 35 U.S.C. § 112, first paragraph, as being non-enabled by the disclosure. The Examiner indicates that enablement of the recited deposition rate of 7000 Å per minute requires every parameter to be recited in the claims. Without admission as to the propriety of the Examiner's rejection, claim 60 is amended to no longer recite a deposition rate of 7000 Å per minute. Accordingly, applicant respectfully requests the § 112, first paragraph, non-enablement rejection of claims 60-64, 66-68 and 70 in the Examiner's next action.

Claims 60-64, 66-68 and 70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sukharev, U.S. Patent No. 5,710,079 in view of Nguyen, U.S. Patent No. 5,356,722 in further view of Wolf, "Silicon Processing for the VLSI Era Volume 1-Process Technology, 1986, pp. 166-167. As set forth at MPEP § 2143, a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Claims 60-64, 66-68 and 70 are allowable over the combination of Sukharev, Nguyen and Wolf for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every limitation in any of those claims.

As indicated in applicant's previous response, Sukharev discloses a method of forming SiO₂ over a surface comprising flowing TEOS, ozone and optionally H₂O₂, but does not disclose or suggest the claim 60 recited utilizing a silicon precursor to directly deposit SiO₂ without feeding added ozone to the chemical vapor deposition reactor. At page 5 of the present Action, the Examiner indicates that although Sukharev uses ozone, applicant fails to provide support for a negative limitation of "without feeding ozone into the

Appl. No. 09/212,726

reaction chamber". As discussed above, the limitation of without feeding ozone is inherent in applicant's specification and is therefore fully supported by the application as originally filed. Since Sukharev does not disclose or suggest this recited limitation and such limitation is fully supported by the specification, claim 60 is not rendered obvious by Sukharev.

As indicated at page 5 of the present Action, Nguyen is relied upon as disclosing a deposition rate for depositing SiO_2 utilizing TFOS and ozone. Sukharev does not disclose or suggest an absence of ozone. As combined with Sukharev, Nguyen does not contribute toward suggesting the claim 60 recited directly depositing SiO_2 over a surface of a substrate without feeding added ozone to a chemical vapor deposition reactor.

As further indicated at page 5 of the present action, Wolf is relied upon as showing a cold-wall reactor. However, the cold-wall reactor as disclosed by Wolf does not contribute toward suggesting the recited deposition of SiO_2 without feeding added ozone into the chemical vapor deposition reactor. As combined, Wolf, Sukharev and Nguyen fail to disclose or suggest the claim 60 recited direct deposition of SiO_2 over a surface of a substrate without feeding added ozone into the chemical vapor deposition reactor. Accordingly, independent claim 60 is not rendered obvious by the cited combination of Sukharev, Nguyen and Wolf and is allowable over these references.

Dependent claims 61-64, 66-68 and 70 are allowable over the cited combination of Sukharev, Nguyen and Wolf for at least the reason that they depend from allowable base claim 60.

For the reasons discussed above pending claims 60-64, 66-68 and 70 are allowable. Accordingly, applicant respectfully requests formal allowance of such pending

Appl. No. 09/212,726

claims in the Examiner's next action.

Respectfully submitted,

Dated:

July 22, 2004

By:

Jennifer J. Taylor
Jennifer J. Taylor, Ph.D.
Reg. No. 48,711